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VOLUME XXX DECEMBER, 1931 NUMBER 9

SOME CRITICAL PROBLEMS IN TEACHING ELEMENTARY GEOGRAPHY

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The chief end in teaching geography is not information, but ability to think geographically. The outstanding educational objective of geography, in other words, is to help make purposeful thinkers and successful doers, not to create animated gazetteers. In order to think geographically, pupils need something suitable to think about, an inducement to think, and appropriate guidance in thinking. The attempt to meet these requirements gives rise to numerous problems in teaching, some of which it is the purpose of this paper to consider briefly.

THE PROVISION OF SUITABLE MATERIAL

The material about which a pupil is expected to think at any juncture is suitable provided it is of such a character and is so organized as to be definitely useful in reaching a worth-while geographic understanding. The provision of such material involves the many-sided problem of gradation, and however commendable the course of study and the text may be in this regard, the teacher should be alert in helping to insure an adequate basis for thought by each pupil at all points. Obviously a pupil should be asked to think only in terms of items which he knows or which he can master with reasonable effort, and whenever a new term, feature, symbol, or other item is introduced as needed, care should be taken to give him an accurate idea of it. Investigation has shown that many errors frequently made by children in geographic thinking are attributable to mistaken concepts of things which they are attempting to use as a basis for thinking. For example, a sixth-grade class which was trying to explain significant differences in north-bound and south-bound traffic on the Rhine River was making little head-

way, and the chief difficulty was found to result from the fact that most of the pupils did not know the meaning of "upstream" and "downstream" and so could not tell from a map showing the Rhine which river haul was upstream and which one was downstream. Such terms as "the left bank of the river," "twenty inches of rainfall," "even distribution of rainfall," "average annual rainfall," "irregular coast," "the situation of the city," "standard of living," and the like, have little or no meaning for many children who are asked to use them. Even the word "maize" was not understood by a normal eighth-grade child. However specific such terms may be, pupils who do not know their import are dealing with mere abstractions when attempting to think in terms of them. There is, of course, nothing new in the rule of proceeding from concrete to abstract, but it is violated so often that a critical teaching problem is that of securing its consistent application.

LEADING PUPILS TO RAISE WORTH-WHILE PROBLEMS

It is of prime importance also that teachers realize the sort of procedure which prompts children to raise worth-while questions for themselves and thus initiates purposeful thinking in which they are interested. "Disconcerting data" are powerful stimuli to purposeful thought activity on the part of a child. Such data may relate to some unexpected feature of an otherwise familiar situation or disclose a new factor in a problem of familiar type; in any case, they challenge attention, pique curiosity, and induce thinking. Suppose, for example, that Minnesota children who are familiar with the harvesting of apples in September and October read that apples are harvested in March and April in New South Wales. If they had not learned already of the reversal of seasons in the northern and southern hemispheres, it doubtless would be disconcerting to find that one may pick ripe apples in New South Wales when apple trees in Minnesota are in blossom. This would promptly raise a question in the minds of the children. In seeking an answer, they should discover, with the aid of the teacher, the relation between the difference in the harvest time for apples in the two places and that in the time of occurrence of autumn in the two.

The technique of using disconcerting data to lead pupils to raise worth-while questions may be illustrated in terms, for example, of the chief manufacturing districts of Great Britain. In thinking of reasons for the localization of manufacturing there, a teacher

familiar with the general significance of coal in modern industry and aware of the fact that Great Britain has much coal, naturally would turn to a map showing the British districts that produce coal with a view to finding how the manufacturing districts are located with reference to them. She would discover, of course, that each of the manufacturing districts of the island is in or near an area producing coal, with the single exception of the London district. This exception could be made to function effectively as a disconcerting element in the work of the pupils.[1] If coal is an important factor in the localization of manufacturing, why is one of the greater manufacturing districts in Great Britain neither on nor near a coalfield? Notice that the technique of leading pupils to suggest such a problem would involve: (1) establishing a norm, that is, setting up various cases in which the pupils will find what they should expect in view of their earlier work, and (2) discovering the variation from the norm that should prompt a definite, worth-while question. Thus the teacher or text would determine in advance the particular problem or problems which it was desired the pupils should raise.

Great harm has been done in teaching elementary geography (as in teaching other subjects) thru failure carefully to lead children to raise worth-while problems and thru acceptance, as worthy of attention, of any chance question a pupil may ask. Much aimless wandering in bypaths of wasted effort results, the while pupils acquire bad habits of thinking. Proper use of the problem method, it may be urged again, involves, first of all, the presentation of facts which disconcert the pupils in such a way as to prompt them to raise questions which were carefully chosen in advance as worthy ones by the author in writing his text or by the teacher in planning her classroom work. This method of introducing problems discourages mental wandering, breeds the habit of clear thinking, and, at the same time, puts on the pupil himself the responsibility of raising problems. It helps the pupil to become a doer, an intelligent instigator of worth-while enterprises, instead of training him to be a mere follower. It stresses *ideas,* as against mere facts. So wide a gulf separates theory and prevailing practice, however, that one sometimes wonders whether the "problem method" of teaching elementary geography has accomplished good or evil in greater

[1] It could not, obviously, motivate all of the work in a unit covering all of the manufacturing districts.

measure. There is a text which, according to the prefatory statement, is based thruout on that method and "in which the memorizing of fact as the main aim, or even as a secondary aim, is wholly abandoned." Despite this avowal, it is simply a book of questions and answers—a catechism; there is nothing for the pupils to do but memorize the author's specific answers to his own definitely worded questions.

THE GUIDANCE OF PUPILS

The appropriate guidance of pupils in geographic thinking involves training in the proper use of the tools—printed matter, maps, pictures, grafs—that are needed in getting concrete facts to think about, in raising problems and in solving them, or in acquiring geographic understandings thru other procedures. Let us return in this connection to the case of British manufacturing, as used earlier. Precisely how is the pupil to gain (1) the information by which he will be disconcerted, and (2) the additional information needed to reach an understanding of reasons for the importance of manufacturing in the London district? Perhaps it will be helpful to consider alternative procedures.

The teacher might tell her pupils that the Lancashire district, the Glasgow district, and so on, are manufacturing areas, indicating each one on a map as she names it, and state that with the single exception of the great London district each of them is on or near a producing coal field. If she then asked what question this information suggested, the pupils doubtless would say, in substance, "Why is one of the greater manufacturing districts where coal is not mined?" The teacher might then bring forward various reasons for this, and later ask the children to give back those reasons. Such a procedure would constitute a lost opportunity for training, first, in the use of tools, and second, in geographic thinking based on information derived from their proper use. The pupils would be *passive* learners at all junctures except the one at which they formulated the question induced by the disconcerting item.

Contrast the following procedure with the one just described. The pupils are referred to an appropriate map of Great Britain to find as many clusters of cities as they can, and are told to name each cluster in terms of its largest city. They are asked, on the basis of their earlier study of other cities, to name the kinds of work which they should expect to find outstandingly important in these cities. They are then referred to comprehensive pictures

which were taken in these urban districts and which show various signs of manufacturing, and are asked to tell what features in the pictures confirm the opinions they had of work there and which ones, if any, disagree with those opinions. They are next asked to recall facts which helped to explain manufacturing in cities studied earlier, and to suggest, with the aid of what they remember, conditions which *may* help to explain the presence of many factories in the British districts shown in part in the pictures. The existence of coal in near-by regions doubtless would be suggested as one possible reason for the presence of the factories. Acting on this suggestion, the teacher refers them to a map showing the coal-producing areas of Great Britain, and directs them to compare the location of these areas with the location of the manufacturing districts. This comparison should result in the discovery, by the pupils themselves, of the disconcerting fact that the London cluster of cities is the only one among those they had named which is neither in nor near a coal-producing area. If the pupils were referred next to reading matter, a table, or a graf, which indicated the rank of the London district and the others with regard to the value of manufactured products, their surprise doubtless would be increased and genuine curiosity aroused as to how London and its satellites, without the aid of near-by coal, gained such importance industrially. Probably the pupils would themselves have various *tentative* reasons to offer at this juncture, and the careless or unskillful teacher might make any of several mistakes in dealing with their suggestions. She might (1) tell them at once wherein the suggestions were faulty; (2) say that the pupils should not offer any suggestions until they have learned more about the facts in the case; or (3) accept suggestions having merit as tho they were conclusive. Suppose the teacher, avoiding these pitfalls, records the suggestions that are sensible and points out that further study of the facts involved should bring out evidence either for or against those suggestions. Study of the problem is thus motivated additionally by the desire to prove or disprove what in effect are "working hypotheses." Note that in this way the pupils are being trained in sound scientific method. Reasoning from insufficient data is discouraged, careful checking of opinions is encouraged, and initiative is stimulated.

The children next seek to discover the particular conditions that explain the importance of the London district in manufacturing.

They are told to ascertain from specific readings the leading kinds of wares manufactured there, and to find how those wares differ in character from the chief products of the other districts. They then search for facts about the London area which are favorable to the outstanding types of manufacturing carried on there. They consult a map showing the railroad net of Great Britain, and are led to see that London is the hub of the system. They are asked what reasons, if any, for this concentration of railroads are suggested by the physical map of Great Britain. They read assigned references which enable them to check their opinions, and to see that the site of London is a natural focal point for landways and seaways. They learn that, largely because of the advantages of its situation, London became a great city centuries before the advent of railroads, many of which focused there because of its size and its situation. So also they learn, thru their use of maps, pictures, grafs, statistical tables, and readings, of various other advantages at this great port for the collection of materials from far and near and for the equally wide distribution of manufactured goods. They see that the growth of population, commerce, and manufacturing have been mutually dependent; that what helps to explain the growth along any one of these lines helps also to explain growth along the others. Finally, they summarize the reasons they have found for industrial growth in London and vicinity, and revise their original opinions in the light of these findings. They see that the problem is far more complex than they had anticipated, and realize that at best their findings do not include *all* the reasons that may be involved. They have the satisfaction of achieving results thru their own efforts. The great value of such a procedure in training pupils in geographic thinking thru proper guidance of their activities should be self-evident. Even so brief and general an outline of the technique involved may serve to focus attention on certain rules which should govern the use of various types of tools in teaching elementary geography.

1. When a pupil is sent to a map, a picture, a passage in a book, or any other tool, give him something definite to find.
2. Be sure the thing he is asked to find is something which he needs at that juncture as an aid in thinking about a specific relationship of man to his natural environment.
3. Be certain on the one hand that the task is within his capacity, and on the other hand that it is not unnecessarily simple.
4. Give him enough time to complete the task. (Pupils need time to study effectively, time when the teacher keeps still unless help is requested.)

5. Lead him to check for himself information gained from one source by that obtained from other sources.
6. So far as practicable, make the information he has acquired serve as a stepping stone to a larger geographic understanding.

GOOD AND BAD PRACTICE IN USING GEOGRAPHICAL TOOLS

To say, as I have in effect, that a tool of any kind should be used in guiding the study of pupils in geography only if and when it will serve a definite geographic purpose is to imply, of course, that it should *not* be employed merely for the sake of developing skill in its use. This two-fold rule undoubtedly is violated far more often than it is observed. For example, most map questions in various texts have nothing whatever to do with the descriptive matter which precedes or follows them; the facts learned from the maps are not used in solving any problem, or in reaching a conclusion about anything. A striking example is found in a recent text for beginners in connection with some map directions and map questions on Australia. The pupil is told to point to Australia on the map, to a part of it "that looks very dry," and to a part "that seems to have plenty of rain." He is asked in what direction Australia is from Asia, what ocean lies east of it, and what ocean lies west of it. One wonders how this map work was expected to function in the geographic training of the child, especially since the chapter contains nothing further about Australia[2] save statements that it is the smallest of the continents (the "island continent") and that the part which looks very dry is one of the great deserts of the earth. Under such circumstances, even a child might well ask about this map work, as about much more in this text and several others, "Why bring that up now?" Unless the fact that part of the Pacific Ocean is east of Australia is made to function in considering some human activity, and is read from a map at a juncture when it does so function, the reading of that fact from the map is not an integral part of geographic study and provision for it has no legitimate place in material designed for such study. All the skill which a pupil needs in map reading can be acquired thru map study that is made to function, and to function directly, in geographic thinking. A pupil who is trained to read from maps facts which he needs and uses in gaining interesting and worth-

[2] The only other references to Australia in the entire book are contained in three or four map questions near the end which relate to its location with respect to hemispheres and thermal belts.

while understandings of how human activities are related to natural environment comes to appreciate the value of maps as helpful tools —as convenient sources of valuable information. On the other hand, a pupil who must read from maps countless facts which he puts to no use not only fails to gain an appreciation of the value and function of maps as geographic tools, but is likely to develop a lively antipathy toward them—to regard them as pests, rather than as aids.

Bad practice, commonly involving violation of the same rule of teaching, prevails as widely in the use of pictures and grafs as it does in the use of maps. Witness these examples in the case of pictures, examples selected at random in some five minutes from five elementary texts: "Have you ever seen a picture of a building in our country that reminds you of this building?" "Point to a windmill in the picture." "Can you think of some things that these women may wish to buy in the town?" "Do you think this place is well named?" "Have you ever seen clocks like this from Germany?" "Notice the terraced vineyards. The first grapevines were brought to the Madeiras by the Portuguese, who discovered the islands in 1419. How long ago was that?" "An old-fashioned country store. How is the store heated?" "A fishing boat. What moves this boat over the water? Observe the ocean waves." "Does strawberry picking seem to be tiresome?" "Have you ever seen seals at a circus or a zoo?" "Some of the native people of Central Brazil. See the tattooing on their bodies." "How many kinds of roofing can you name? Which is cheapest?" "For what purposes does the elephant use his trunk?" "Japanese women threshing barley by hand. How do they do it?" A slight modification of the last question might well be applied to those who ask such questions: How *can* they do it? When so many facts that are useful in geographic thinking can be gained from appropriate pictures and grafs, why waste the time of pupils with such piffle? Why waste their time in gathering from pictures and grafs any facts, however great their *potential* value, that are not used? To do the latter is not unlike putting a needle and thread in the hands of a child and trying to teach him to use them without allowing him to sew. "Sewing" with geographical tools means using them as a means of getting information which is then woven into geographic understandings. The pupil takes a geographic "stitch" when he uses a fact so gained to comprehend how a specific human item is related

to a particular natural item. In the case of a picture this normally involves (1) observing the human item or items in the scene: what, in other words, there is of man, his work, or one or more products of his work; (2) noting the natural setting of the human item or items; and (3) considering what the picture shows or suggests about the relation of the former to the latter. Questions and directions should afford such guidance in this procedure as is needed, and should insure the use in further geographic thinking of the information obtained from the picture. Any picture, it may be added, with which these things cannot be done has little or no utility as a tool in teaching elementary geography, however interesting or valuable it may be in other ways.

An all-important point that I am trying to make is that children should have, at every juncture, adequate guidance of an appropriate kind in using tools and also in using information acquired by means of them. Such guidance may be provided, I believe, thru the consistent application of the six rules already stated, to some such teaching plan as that suggested in connection with manufacturing in the London district. Before leaving these problems associated with the guidance of pupils, I wish to urge, however, that an "appropriate" question or direction is one which is practicable, which is suited to the capacity of the class, and which leads to immediate acquisitions which further the theme of the unit in hand. This seems worth while, despite the repetition involved, because great numbers of questions and directions may be found in teachers' assignments and in textbook exercises which fail to meet one or more of these requirements. The caption of a picture in a certain text is "A mule train in a mining region," and the pupils are asked, "With what would the mules be loaded on the return trip?" Since the pupils cannot possibly tell where the mule train was going when the picture was taken (whether, for example, to some mine or to a shipping point and base of supplies), it is obvious that they cannot determine the point of departure for the return trip and so can only *guess* at the nature of the return load—whether, for instance, it would be a load of minerals or one of supplies. Even if they knew this, they could not tell what mineral or minerals would be taken out, or what kinds of supplies would be brought in. Such impracticable questions always invite mere guessing, and they cannot be condemned too strongly. Elsewhere in the same book the pupils are asked what a small "products map" of

the Far West shows them that is helpful in finding three reasons why the Plateau States are not a good farming region. If I counted correctly, the map contains more than four hundred twenty-five entries which relate to some forty-one different products, twenty-two of which are farm products and several more of which come in part from farms. The complex and confused character of the map makes it unfit for use by young pupils, and it shows nothing that could help them in learning why the plateau section is not a good farming area. One of the earlier pictures in another text, a book for beginners, shows Himalayan peaks, snowfields, and glaciers. The child, presumably a fourth-grader, is told to "study" this picture, a direction the absurdity of which is self-evident. He can *look* at the picture, but in so doing he obviously cannot acquire by his own efforts any knowledge of glaciers or of serrated peaks. In this case, the inability of the pupil to carry out the direction is not to be regretted, since the study assignment could contribute nothing directly to his training in geographic thinking even if it were within his comprehension. Illustrations of inappropriate questions and directions might be cited almost indefinitely. Only by ceaseless vigilance may one avoid the mistakes in teaching that are reflected by them, and provide the effective guidance which is needed by pupils who are to form sound habits of independent geographic study.

THE PROBLEM OF TESTING

Attention may now be directed to a final problem, that of testing. Since the proper function of geography as an instrument of education is to develop the power and habit of thinking geographically and not to teach mere facts, it follows that most tests should be designed chiefly to measure the ability of pupils to use pertinent data in explaining important geographic relationships. Certain diagnostic tests would seem to constitute the only valid exception to the rule. Nevertheless, most geography tests emphasize environmental or human facts almost exclusively. A test on Japan, for example, which contains only such questions and directions as "Thru what degrees of latitude does Japan extend?," "Name the largest three Japanese cities," "What is the chief import of the country?," " The principal export?," "Write a brief description of the climate of the country," and so on, calls for no geographic thinking, is indeed devoid of direct geographic quality, and tends to retard the progress of pupils by encouraging them to memorize

similar facts in other units in preparation for later tests, instead of using those facts as stepping stones to geographic understandings. Consider next a test on Japan made up of such questions as the following: "How does the latitude of Japan help to explain its chief agricultural products? What is the leading export of Japan? What have you learned about the surface, the climate, and the people of the country which helps you to understand why this product is exported in large quantities? A traveler who recently visited the northernmost and southernmost of the larger islands of Japan wrote the following brief description of the use of natural resources in one of them. To which of the islands do you think the description applies? Why do you so think?" A test composed of such questions helps to measure the ability of pupils to think geographically, and also stimulates the practice of such thinking.

Objective tests in geography, no less than subjective tests, should emphasize relationships of man to the earth and not mere facts about people on the one hand or places on the other. The widespread belief that this is impracticable is erroneous. Suppose, for example, that one were constructing a simple true-false test on the geography of Switzerland. Two statements in the test, one true, the other false, and both expressing geographic relationships, might be the following: 1. "There is no farming in Switzerland, because the land is too high, the slopes too steep, and the summers too short for crops to grow well." 2. "People in Switzerland use much valley land for growing certain crops, such as potatoes and rye, which do not need long, warm summers." A multiple-choice test made up of geographic statements is less easy to construct than a true-false test only because three or more statements in each group must be written for the pupil to consider before he checks the false or true statements, as the case may be. Searching tests of this kind need not be inconveniently long, however. For example, a three-choice test on the relationship of varied human activities to sun behavior might consist of statements each group of which would be as brief as this one: "Mrs. Smith has found that her house-plants grow best in the sunlight and so she keeps them in one of the north windows of her house, for where she lives the mid-day sun is always in the northern sky. She lives (a) between the Tropics, (b) north of the Tropic of Cancer, (c) south of the Tropic of Capricorn." Pictures may be used effectively in multiple-choice tests thru the medium, for example, of such questions as

the following: 1. "Picture No. 5, or one showing the same crop, might have been taken in many places in (a) northern Brazil, (b) northern Australia, (c) Argentina or Russia." 2. "The crop shown in picture No. 10 suggests that where the latter was taken the annual rainfall is (a) less than ten inches, (b) between ten and twenty inches, (c) more than twenty inches." "Completion tests," in which pupils are asked to select from a list of words or phrases that word or phrase which will correctly complete each of a series of incomplete sentences, or perhaps are told to "cross out" the incorrect item or items in alternative words or phrases which are included in a series of statements, may involve relationships as readily as mere facts. The following statements illustrate the second procedure, in which the pupil is asked to "complete" an accurate assertion by deleting alternative words or groups of words which do not fit the case. 1. "The supplies of pulp wood in the forests of the United States are (a) more than sufficient to meet the needs of the country, (b) insufficient to meet the needs of the country, and partly for this reason paper and wood pulp are important items in (c) its export trade, (d) its import trade." 2. "Partly because Seattle handles most of the trade of the United States in (a) raw cotton, (b) raw silk, it is primarily (c) an importing port, (d) an exporting port." As these statements may suggest, a given item in an objective test may relate to multi-regional relationships, rather than to one or more in a single region. "Matching exercises" of an objective type are particularly useful in testing a knowledge of the geographic personalities of great cities and important countries or regions. A fairly long list of great cities, for example, may be followed by several paragraphs in each of which the geographic personality of one of the cities listed is described without the use of any place name that would invalidate the value of the paragraph for testing purposes, and the pupil may be asked to write opposite each paragraph the name of the city to which it refers.

My intention in commenting on tests of various sorts is not to explain their nature, for that is needless, but rather to plead that geography tests, subjective and objective alike, shall emphasize geographic relationships, rather than locational, environmental, or human facts, and that they shall measure the ability of pupils to think geographically and to do so in a manner appropriate to their stage of advancement.

THE EFFECTIVE TEACHER

A prominent educator protests that "we do not know very much about the characteristics of a good teacher." *Whatever else is involved, we may be sure that the effective teacher of geography will stress active learning as against passive learning, will guide pupils carefully in their use of the tools and raw materials of geographic study, and will seek always to develop in them the ability to think and do, not absorb and remember.*

LOWLAND AND HIGHLAND FARMS IN SCOTLAND*

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Anyone who knows Scotland always thinks of it in terms of "the Highlands" and "the Lowlands." The country is a little one, no larger than Maine or South Carolina, yet it is divided into very distinct sections.

The Lowlands, endowed by nature with good harbors, rich coal fields and gently rolling surface, support nearly nine-tenths of the population. Altho the Highlands occupy fully one half of the country, nature has placed little there which man may use in making a living. If we visit a farm in each section we shall appreciate the contrasts between the northern highland area and the southern lowland area more fully.

The first farm we are to have the opportunity of investigating borders the Tweed River and lies south

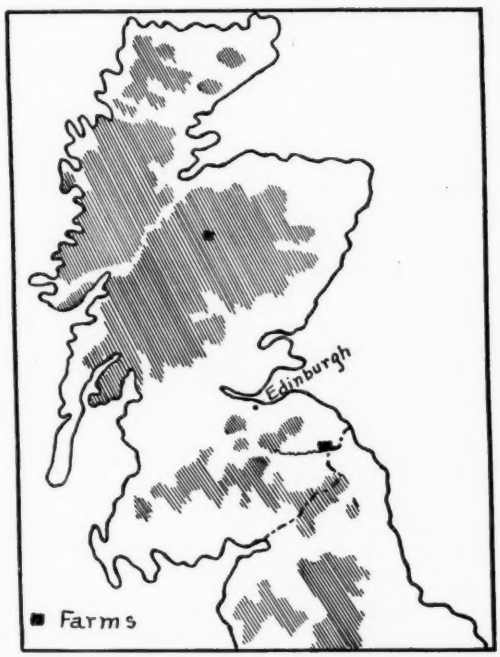

FIG. 1. Sketch map of Scotland. Shaded areas are the Highlands and the Southern Uplands.

* Written for the purpose of showing what geographical concepts may be built up at sixth grade level thru the use of farm projects.

of Edinburgh about two hours' ride by train. A beautiful ride it is, thru pretty little villages, across rich, rolling farmlands where one sees rose-covered cottages beside the road or looks up a shady avenue to see the stone mansion of a wealthy land owner.

On we go, crossing winding streams trickling over mossy stones,

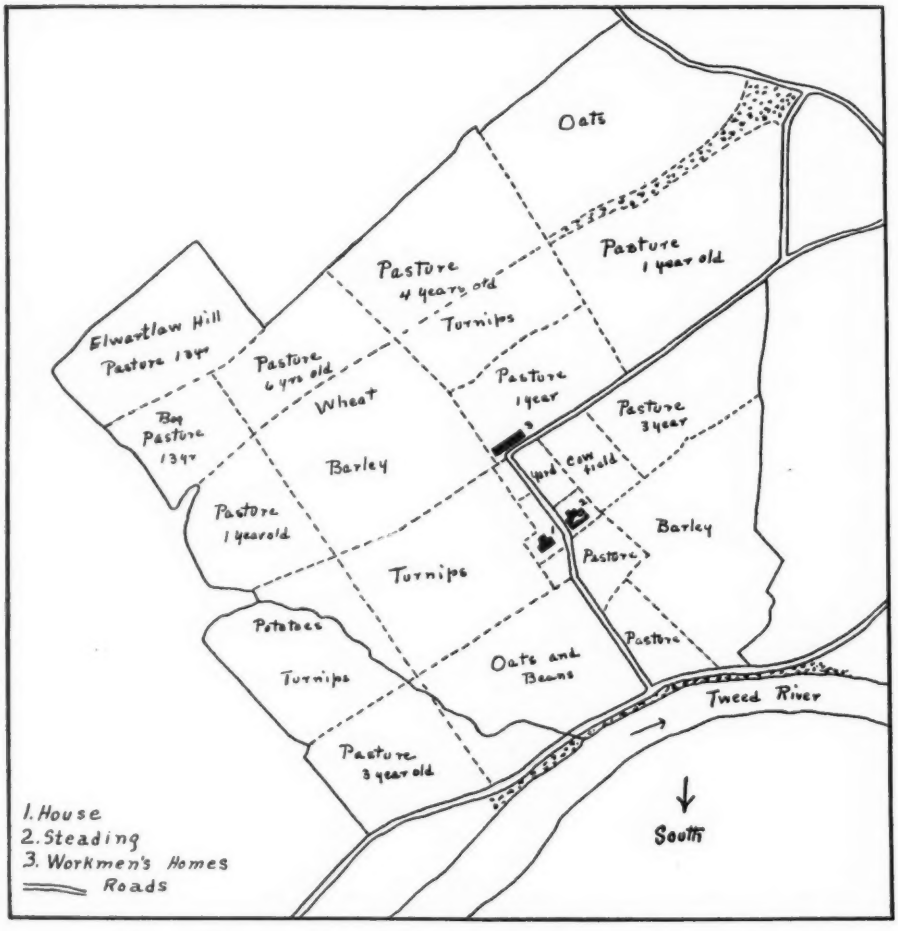

FIG. 2. Sketch map of a farm in the Border Lowlands of Scotland.

following a mile-long stone wall enclosing the estate of some old family, making short stops at stations where bright flowers fill every possible nook, until finally the train brings us to the station where our farmer friend is waiting to drive us to Lochton—his farm. We are to discover before we leave that farms in all parts of Scotland are named.

A SCOTTISH LOWLANDS FARM

"Why are those men and women stooping over in that field across there?"

"They are thinning out turnips," says our driver.

"Listen to the ba-baing of those sheep and see what a peculiar yellow they are! What is happening to them?"

"They are being dipped into water in which we have put a sulphur solution. See, right here beside the road we have dammed up a little burn which runs into the Tweed River a few yards down. Into the pool behind the dam we poured the 'sheep dip' and the shepherds are busy putting the sheared sheep thru it to rid them of insect pests. I suppose you Americans would say 'creek' instead of burn."

"And what is that pleasant fragrance?" we ask as our car leaves the well paved road alongside the Tweed and turns into the graveled lane which leads to our friend's home.

"That is the scent of the horse-beans. If you peep over the hedge you will notice the purple flowers on the tall bean stalks among the oats."

Three things strange to us already! big fields of turnips, sheep being dipped in a burn and bean stalks two feet tall among the oats. How many more new experiences shall we have before we leave?

A FARM OF MANY FIELDS

Lochton contains four hundred fifty acres. Less than one farm out of every twenty-five in Scotland is larger than three hundred acres. Lochton is typical of these larger ones.

The layout of Lochton, as shown on the sketch above, will look much more homelike to a farmer of New York state than it will to a man from the prairie plains of the Middle West. The fields are far too irregular to look familiar to farmers from the plains regions of North America.

The farm is surrounded by hawthorne hedges and most of the fields are separated in the same way. The hedges are beautiful to look at, especially in June when covered with fragrant white blossoms. One not accustomed to them is struck by the great amount of land they take up; this too in a country where land is scarce. On this large farm one man has fairly steady work trimming the hedges and stringing wires thru broken places in them.

All year long he can work at this as the winters of southern Scotland are mild even tho it lies farther north than Winnipeg, Canada. Winds from the ocean surrounding the island keep the winters from becoming as cold as one might expect to find them at fifty-six degrees north latitude.

If we take a tramp with the farmer about his place we shall learn far more about Scottish farming than we could by going alone. As we come out of the house and look toward the south a line of trees about a fourth of a mile away marks for us the bank of the Tweed which we followed in coming. Away beyond the river

FIG. 3. The farm house at Lochton. Notice the number of chimney-pots.

we catch thru the misty air a glimpse of distant hills, the Cheviots. Before we leave Scotland we find that the air is generally misty, another result of having ocean close by on two sides.

Between us and the road lies the field of oats and beans we saw while coming in. The beans, the farmer says, were sown three weeks before the oats and will be ripe and ready to cut with the grain. The bean crop serves a double purpose. The roots by storing nitrogen help enrich the soil and the large flat beans furnish fine feed for cattle during the winter. We Americans are so accustomed to an abundance of corn for stock that we never stop to think what farmers use for feed in a land where summers are too cool for corn to grow.

MANY FIELDS ARE PASTURES

Leaving the house we strike out past the farm buildings which we shall examine at another time. Walking to the east and then north we go thru pasture after pasture. Two hundred twenty-seven acres of the farm are in grass, we learn. Seventy-two acres of this have been in grass only one year. A very careful rotation of crops is practiced to keep the land in good condition.

One of the pastures has been in grass steadily for more than thirteen years. Our guide pulls out his notebook to give us the exact data. It is not difficult to see why this field is not so frequently used for crops as the others. The steeper slope and the numerous small stones remind us of pastures in parts of New England where the ancient ice-sheet which visited it ages ago had been too generous in the number of stones it left behind and too stingy in the depth of good soil.

At that same time another ice-sheet visited northwest Europe and the British Isles. It, too, was generous in the numbers of boulders and smaller stones it left behind. This contribution of stones, however, has made it easy for the farmers of the countryside to build stone fences cheaply.

Eight of the pastures, the farmer explains, are used for sheep. More than five hundred of the eight hundred fifty which are on the farm this June day are lambs. Sheep raising is a most important branch of farming in all parts of Scotland, especially where soils are thin and stony. A rainfall of about twenty-five inches in this part of the country causes grass to flourish. Twenty-five inches may not seem a heavy rainfall, but here the summers are cool and damp, winds blow in from the nearby ocean, mist and fog abound and the evaporation is not great. The farmer takes advantage of the mild winters by letting the sheep run out and thus obtain at least a part of their feed from grass.

The cool, damp summer climate favors the sheep industry in another way by being very suitable for root crops. The sixty-six acres of turnips on the farm will serve as sheep and cattle feed. In some years, the farmer tells us, he rents a few acres of turnips to neighboring farmers who turn in their sheep to fatten on the roots. For this privilege the owner of the flock pays from eight to thirty cents per sheep per week.

There is one way in which the damp, cool climate favors the sheep raiser more than it does the sheep. All thru the year heavy,

woolen clothes are very comfortable in Scotland. A good market is thus created at home for the woolen and worsted goods for which Scottish mills are famous.

In our walk thru one of the pastures we come to a large galvanized-iron box. Lifting the lid the farmer shows us the mixture of ground corn, cotton-seed cake, broken locust-beans, and barley dust. The corn he calls maize, since in Europe the word corn is used as we use the term small grain. Probably Argentina furnished the corn in the box, perhaps the United States did. (You may want to investigate this for yourself in the United States Department of Agriculture Yearbook). The locust beans are the fruit of a tree grown in countries around the Mediterranean Sea; the cotton seed probably grew in Texas fields, and the barley was grown at Lochton. A low, wire fence partitions off the corner of the field in which the box stands. Beneath this fence we watch the lambs squeeze to get the grain which is poured into little troughs.

"We are fattening our lambs now," says the farmer, "and many of them will be driven to the market in July. Much mutton is eaten in Scotland and in most years fine, well-fattened lambs find a ready sale. London's huge population takes what mutton we do not need at home."

As we continue our walk our attention is called to a bit of board fence perhaps twenty or twenty-five feet in length which takes the place of hawthorne hedge, a rather curious looking break in the even green line.

"This is made at the request of the fox hunters. Each winter here, many fox hunts take place. The Berwickshire Fox Hounds meet three days a week and hunt over an area of twenty square miles; the Duke of Buccleuch's Hounds meet regularly four days a week and hunt an area of thirty square miles. The riders meet, the fox hounds start a fox and off they go, dogs and hunters tearing across the fields in pursuit of Mr. Fox. If you could stand where you now are some cool winter morning you might see the pink-coated hunters on beautiful horses come popping over the fence. You can see it would be much easier to jump it than the higher, wider, prickly hedge. But the more fearless riders do not stop at anything and many a one gets a good tumble, especially if there chances to be a ditch beyond the hedge."

Our walk has by this time taken us thru the pastures and out into fields of oats and barley. We learn that the farm has sixty-

two acres of barley and only fourteen acres of wheat. Altho this region is as far north as the spring wheat region of Canada, the mild winter permits the wheat to be fall sown and the farmer chooses to sow then rather than in the spring because of the press of spring work. The yield of fall sown wheat is a little better than that of spring sown because the crop has a longer growing season.

"Last year my wheat ran nearly sixty bushels to the acre altho Scotland's average is only about thirty-nine," remarks our guide.

"Only thirty-nine bushels to the acre." This is no time for us Americans to talk. We simply do a little thinking about the average yield per acre in our own home state. These high yields seem the more strange when we know that wheat likes hot, sunny ripening weather which Scotland seldom has. It is only on the eastern side of the island that British farmers find wheat-growing successful at all. There the rain is not so heavy as on the west.

Even high yields do not make wheat growing profitable in Scotland, or in any part of the British Isles, for that matter. High yields come only with much fertilizer. Fertilizer is too expensive and fields are too small to permit satisfactory competition with the cheaply grown wheat from the extensive, rich, new lands in North and South America and Australia.

The Superintendent of Statistics for the Scottish Department of Agriculture says that Scotland raises only wheat enough to meet the demands of its people for one-half day out of each week. England and Wales do a little better so that taken altogether the United Kingdom can supply itself with home grown wheat one day and a half out of each week. For the other five and a half days it must depend on other countries.

THE FARM HOME

But four o'clock has arrived and we are still more than half a mile from the house. Even tho we know that tea is waiting for us we are greatly tempted to linger in the beautiful flower garden which lies to the west of the house. The tulips, daffodils, narcissus, and snowdrops are past, the mistress of the house tells us. The tall delphinium stalks we can see are just budding, while white, yellow and orange Islandic poppies are a mass of bloom. To the south of the lawn is a long bed of more than three hundred young rose bushes. We learn that roses can be gathered as late as Decem-

ber and are reminded of the Christmas roses of Portland, Oregon. Many things here have already reminded us of our own northwest coast.

The large stone house with its slate roof and ivy-covered walls is very attractive. The numerous chimneys prepare us for the many fireplaces inside. Altho this is a June day a cheery fire blazing in the fireplace of the drawing room is very grateful for the air feels damp and a little chilly to one used to hotter summers. All over the British Isles most homes are heated with open fires just as are many on our own west coast. While some newly built homes and many large hotels and apartment houses have furnaces and steam heat, winter temperatures are mild enough to permit a home to be made comfortable with fireplaces.

We must remember that the British are an outdoor people used to plenty of vigorous walks and games. Then too, they wear heavier clothing than we do. Much the same weight of clothing is comfortable thruout the entiré year. In most parts of the United States and in some parts of Canada this would not do.

In Britain afternoon tea is the custom. Most visitors there return feeling that it is a very pleasant custom. Are you thinking that it is a great waste of time? Not so much as you may think perhaps; after this half hour of rest it is possible to work vigorously until late. Dinner may not come until seven or eight o'clock.

Tea in Scotland is not merely a cup of tea and a wafer. It means bread and butter, scones, strawberry jam and currant cake. Boys and girls enjoy it as much as grown folks tho of course they do not drink tea.

After tea we are shown about the house. On all sides we see modern conveniences, everything that one would expect to find in city homes except electric lights. In drawing room and dining room very good gas lamps give all the light needed, in the other rooms kerosene lamps serve. Upstairs we find four large bedrooms, all of them with fireplaces, a study and a bathroom.

By this time we have come to realize that this farmer does not do the manual labor of the farm. His work is to see that everything is conducted in a business like fashion. He keeps books as carefully as do men in other lines of business, studies market reports, plans crop rotations and investigates new farm practices. On smaller farms thruout the British Isles the owner or renter is likely to do his own farm work with the help of his sons or perhaps a hired man or woman.

Everywhere in European countries one sees women working in the fields. We are not used to this in all parts of our own country. Suppose we debate the question and decide whether work in the factory or work in the out-of-doors is more healthful. There may be two good sides to the question.

At ten o'clock it is still light but we are tired enough to be ready for sleep. At fifty-six degrees north latitude June days measure more than seventeen hours from sunrise to sunset and twilight is very, very long. If one measured his sleep by darkness and his work period by daylight he could accomplish much in Scotland in summer. But in winter it would be quite a different story for the December nights are as long as the June days.

STONE FARM BUILDINGS

After breakfast the next morning we start investigating the farm buildings or steading as they call it. These, no, we should really say "this," because the whole thing is one building, is in the form of a hollow rectangle. The material is gray stone. Stone and brick are the most used materials for buildings all over Britain. It is easy to understand why little wood is used when we learn that less than one-twenty-fifth of the country is in forest. In the United States more than one-fifth of the land is in forest.

The steading is a huge affair 240 feet long and 120 feet wide. It houses horses, cattle, grain, binders, plows, mowers, and other farm machinery, fertilizer, and everything else which farm buildings usually shelter. The cattle sheds open into central feeding pens where in winter feeding is done. Each October the farmer buys some young cattle to winter. During the next summer he fattens them on pasture and later on oilseed cake and turnips. Very likely the cattle come from Ireland because each year Scotland imports about one-fourth of a million cattle from the island for feeding purposes.

In a room adjacent to the cattle shed is a small stationary threshing machine run by a gasoline engine.

"When do you thresh?" we ask.

"Whenever we need money, grain, or straw. The straw we carry directly into the cattle pens or the shed where it is laid down two or three feet thick. The cattle tramp it down into manure and later we cart it out and spread it on the fields. In addition to this farm manure I have to buy an immense amount of artificial fertilizer. It is only by constantly adding plant food to the soil that we

keep our land in good shape. Our farms, you know, have been cropped for many hundreds of years. I, myself, have rented this farm for over twenty-five years."

"How much help do you have on the farm?"

"We have four plowmen who do the general work about the place, a shepherd, a cattleman, a gardener, the boy you saw out there hauling water to the pastures, and four farm women who do the lighter farm work such as weeding, thinning and shawing turnips, hoeing potatoes and shocking grain. Over all of these there is a steward who plans with me the work to be done each day and sees

FIG. 4. The row of cottages where the workers live.

that it is done as it should be. Besides these we have a poultry woman and in the house two maids. You see we do not have your large farm machinery so we need more farm labor than you do. You must remember too that southern Scotland is densely populated and labor is plentiful.

"Most of this labor is housed on the farm. If you walk north along the lane which runs between the house and the steading you will see a little row of cottages where the workers live. Each cottage has a garden behind it. Some of these men have worked on this farm all their lives, beginning as boys.

"Perhaps," continued our guide, "you would like to know what we have to sell. In any given year we may sell any or all of the following: oats, wheat, barley, beans, potatoes, lambs and sheep, wool,

pigs, cattle, eggs, chickens, and, as I explained before, sometimes we 'let' turnips." This is fairly typical; a census of agricultural production taken in Scotland in 1925 showed that nearly three-fourths of the value of the things sold off the farms came from meat, milk, butter, cheese, poultry, eggs and wool.

After all of these explanations we feel that we have a much clearer picture of how the British farmer relates his work to the out-of-doors in which he lives. We are anxious now to contrast this farm with a small one in the Highlands much farther north, so bidding our kind hosts of the Border Lowlands goodbye we take the train for Edinburgh.

ON TO SCOTTISH HIGHLANDS

After a night spent in Edinburgh, a city of which every Scotsman is vastly proud, we board a train bound for the north at ten in the forenoon. By twelve o'clock we have left the Lowlands at Perth and our train begins climbing upward thru beautiful valleys into a very different country. Up and up we go, thru forest, past sparkling waterfalls, down a glen to climb up a little higher in the next one. Here and there, near a picturesque station we see a beautiful summer hotel. The Highlands sells its bracing air, its fine fishing and its beautiful scenery to summer visitors.

Twisting and turning we puff along. Altho the climb appears a big one we go no higher than 1480 feet. It seems that we have done more than this because we have come right up from sea level. The highlands are not like our own Appalachians—regular ridges with valleys between. Rather they resemble a rugged plateau-like area with here and there peaks.

A drizzling rain is falling as we leave the train at four o'clock. This is such a common occurrence that Highlanders pay no attention to it. The story is told that in the midst of a tremendous downpour a stranger in the Highlands said to a native: "What a dreadful rain!"

"Aye," replied the man, "it's a wee bit mistin' the day."

A SMALL HIGHLAND FARM, THE GLEBE

A ten minute auto ride across the moorland road brings us to the farm where our second visit is to be made. Arrived at the cottage we look out over the miles of moor in front. Scanty grass and patches of heather are its covering. Here and there a clump of

broom holds its brilliant yellow blossoms up high to give a splash of color. Far off in the distance they tell us are the Cairngorm Mountains, not to be seen this dull day. Even in June and July they often have a snow cap tho they are no higher than four thousand feet.

Behind the house rises a wooded hill, a part of the estate from which this farmer rents his land. Here the farmer has the privilege of supplying himself with the wood he needs for fuel.

The entire farm consists of forty-five acres—rented from a large estate owner. Of this, fifteen acres are in permanent pasture,

FIG. 5. The home of the Highland farmer at the Glebe. From the wooded hill behind the farmer may take his firewood.

the rest in turnips, potatoes and oats. No hedges separate the fields here, stone fences serve instead. In October the farmer buys one hundred sheep which have been grazing on the higher moorland during the summer under the care of shepherds. These animals he will fatten on turnips and whatever grass he has. He keeps a few chickens and two or three pigs. Two milk cows are a source of income also.

The comfortable little stone cottage in which we are visiting is occupied by a family from Edinburgh. Year after year they come up here to spend the summer and enjoy the fishing, the golfing and the scenery. The farmer lives in a much more simple cottage behind this one. A good share of his income comes from the rent of this better cottage. To these summer visitors he sells milk, but-

ter, eggs and vegetables. All about, his neighbors are doing the same things. If it were not for the summer visitors many of the small farmers would have but a meager living.

The short, cool, damp summers, the steep slopes, the thin rocky soil all make farming a difficult task in the Highlands. Great stretches of farm land are not seen. Here and there a few farms cluster together in glens—or at the base of slopes. Now we are better able to understand the reason for the statement that less than one-sixth of Scotland is plowable land. Nine million out of nineteen million acres are classed as "rough grazing land" and most of this is in the Highlands tho some is in the Southern Uplands, a hilly region on the English boundary.

As we drive about on the winding roads we see great estates of thousands of acres of woodland fenced in with high, tight fences. These are the game preserves belonging to wealthy men whose homes are perhaps in some of the large cities farther south. Thruout most of the year these estates are under the care of gamekeepers who watch to see that nobody poaches there. During a few weeks in the fall the owner will bring a party up with him, open his home on the estate and spend the days shooting partridges, grouse, pheasants, hares and even deer. Much of this land would be of little use for farming.

Before we leave we have an opportunity to see the inside of this Highland farmer's home. It is scrupulously clean but very simple. The kitchen is the main room and a large fireplace is the most important feature of that. In this fireplace all of the cooking is done. Hooks in the side allow the tea kettle and the big iron pot to be hung over the fire. A built-in bed occupies one side of the kitchen. Two other bedrooms are behind the kitchen.

There are none of the conveniences here that we saw in the larger farm in the Lowlands. The farmer works hard from one year's end to the other. He spends only what is necessary. To many of us his life would seem hard and his pleasures few. But he is free and independent, he has money in the bank, he is living the life that his fathers before him for many generations have lived.

TEACHING GEOGRAPHY IN THE TWO-YEAR NORMAL SCHOOL

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Many articles have appeared recently in educational magazines dealing with the problems of geography instruction in the various types of schools in our educational systems. For some reason, perhaps because it is gradually giving way to the teachers college, the two-year normal school has received little attention. Nevertheless it is still, in many states, the only institution for the training of teachers for elementary schools. Nearly all states consider the two-year course as sufficient preparation for the teachers of the lower grades.

In this shorter course, with the very limited time that can be devoted to geography, many problems arise which are not as easily solved as in the longer training period of the teachers college.

No matter where our school may be located, students enter with varying degrees of "unpreparedness." Many have had no geography of any kind since the sixth grade. A smaller group have continued in the junior high school with a course that gave them a much greater fund of geographic information than the first group possess. A few, usually a very few, have had a course in senior high school which was a marked advance upon the previous work. We must add to these factors the varying quality of the schools in which our entering students received their preparation, and differences in their native ability as well.

What shall be done with this heterogeneous group? Many plans have been tried by different schools. Some require of all entering classes a test equivalent to an eighth-grade standard achievement test. Those who fail are not usually excluded, or debarred from class work, but must in some way make up their deficiency. Of necessity, this involves "hospital classes," tutors, or similar plans, with the burden of the supervision tending to fall upon the geography teachers.

There is still another group, not always small, who have sufficient factual knowledge to pass the test, but who have been taught by such a memoriter, old time drill method that they have an utter distaste for the whole subject, and entirely wrong notions as to its values and objectives. These students are poor material for

future teachers of geography unless we can give them a very different point of view.

Another problem that we cannot ignore, if we see our task in its entirety, is the oft-repeated assertion of superintendents that teachers lack sufficient knowledge of subject matter.

We have stated a few of our problems. How shall we attack them? First should we not see clearly our objectives—what we hope to achieve? The following ten statements, tho perhaps incomplete, will furnish a basis for discussion:

OBJECTIVES IN NORMAL SCHOOL GEOGRAPHY

1. The first objective is a new viewpoint; to give the student a clear conception of what we mean by modern geography and the important place it holds in the life of today.
2. A permanent interest in and love for the subject.
3. A knowledge of the literature of the subject, such as texts, books of travel, stories of exploration, geographic magazines and so forth, and a desire to do further reading.
4. A thoro knowledge of important geographic principles and how to apply them, not only in explaining their own environment, but the environment of all people.
5. Acquaintance with the geographic tools: maps, globes, season apparatus, and all forms of visual aids and ability to use them well.
6. Knowledge of the "minimum essentials" of factual geography; also of suitable projects and problems and other methods by which they may best be taught.
7. A knowledge of how to adapt the subject matter to the various grades from the lowest to the highest.
8. A realization of the close relationships that geography bears to many other subjects and ability to correlate with them.
9. Ability to conduct field trips in their own community and to interpret physiographic features as they influence the lives of the people.
10. An appreciation of what we mean by being a citizen of the world, and of the spirit of the phrase, "the brotherhood of man."

Any one of the above objectives needs full treatment, but only a few brief comments can be made here.

A NEW VIEWPOINT

This point must not be slighted. The geography of the past, and much of the present, emphasized the memorization of large groups of facts; important, it may be, but taught with little attention to the relationships they had to the lives of the pupils. Few students entering normal school have ever felt the influence of a teacher who saw in geography the finest of all subjects for helping to make better citizens and to give right attitudes toward all the peoples of the world. A certain superintendent of schools, coming out of a meeting where a geography teacher had set forth the val-

ues of his subject, was heard to remark with surprise; "Heavens! but he makes geography a big subject, doesn't he!" The prospective teacher needs to get this same vision.

A Love for the Subject and a Knowledge of its Literature

These two aims may seem rather obvious but do need comment upon one point, at least. A normal school teacher may well be a specialist in his subject, but should not be a specialist in one phase of geography. The more thoroly he knows his subject matter, the more enthusiasm and vitality he will put into his teaching; but one who became wholly absorbed in plant geography, for example, would rarely be a success as a teacher of general geography. Our studies and our teaching must be broad enough in scope to make us and our pupils see geography in all its relations to the general curriculum of which it is a part.

Knowledge of Geographic Principles

This is the key to better teaching; the point where the present-day geography breaks away from the old. We have always taught facts about man and his activities; we have taught, too, about man's natural environment. When we explain the relationship between man's activities and his environment, we are using geographic principles. There can be little good teaching of geography unless we constantly stress this connection. No aim of our normal school instruction needs more emphasis than this. It should become so thoroly a part of the prospective teachers that there is no chance of their reverting to type, and teaching as they were taught.

Geographic Tools

Teaching the use of all forms of geographic equipment should, without question, be a part of our work; but too much use of the more elaborate maps or apparatus is, in one sense, a mistake. Few of the students who are in our classroom will find in their schools much material of this sort. They must teach with inexpensive things. Should we not attempt to do the same? Even when we use more elaborate devices for explaining difficult subjects, the seasons for example, we should follow with a simpler method, using materials they will be able to secure.

"MINIMUM ESSENTIALS" OF FACTUAL GEOGRAPHY

In the minds of many readers, this is the most important purpose of geography instruction. Certainly we can do little without facts. A rather comprehensive knowledge of all the countries of the world should be the desideratum of every teacher of geography, but no such achievement can be expected of our students at the end of a two year course; nor is it a necessity in order for them to do excellent teaching.

KNOWING THE PLACE OF SUBJECT MATTER IN THE GRADES

This objective is often ignored, unwisely, we believe. A teacher cannot be considered well prepared who knows only the subject matter of her own grade. She need not know all the methods of teaching in other grades, but she should know well how her own unit of work fits in with the rest to make the whole.

RELATIONS TO OTHER SUBJECTS

Most teachers of geography feel that their subject has a definite place of its own in the school curriculum. They have no desire to see a fusion with other social subjects until its identity is lost. Perhaps this idea, so much discussed, of unification of subjects may not be the *summum bonum* of curriculum making, but we must, at least, be open minded, see all the good we can in it, and grant it a fair trial.

All teachers should and do recognize a close correlation with many of the other subjects of the grades, and seek every opportunity to show that relationship. For example, the teachers of geography and history have so much in common that exchanges of materials, ideas, or even of teachers is desirable. The working together of departments never fails to impress students and helps greatly to give them right attitudes toward similar work in the grades.

FIELD TRIPS

This part of our work is unquestionably hard to do well. All advocates of good geography teaching are prompt to recognize the value of field trips, but often are deterred from attempting them because of the supposed difficulties. The normal school instructor in geography can best further this important phase of the work by carefully planning his own trips, conducting them in the right manner, and following them up in the classroom recita-

tions that follow. Give as many as possible, but better a few well planned than many carelessly done. Insist upon having them at any cost, and encourage your future teachers to use them in the grades.

A "CITIZEN OF THE WORLD": THE "BROTHERHOOD OF MAN"

This is the most intangible of all the objectives stated. We shall find it impossible to test the results of teaching upon this point. Yet, is it not the climax of our work?

Educators use the word citizenship as the basis of admission of any subject into the curriculum. Citizens of what? a community, a state, or a nation? We cannot stop there. Citizen of the world is not a catch-phrase. We must help all who come under our instruction to know its meaning and its spirit—to become internationally minded. No other subject can give to the pupil such an understanding of the peoples of the world, their environment, their work, their accomplishments and desires, as geography. If we can make our future teachers see it, even dimly, we may rejoice that we are teachers of geography.

TYPES OF COURSES

What type of course shall we give to best achieve these objectives? Courses in geography for teachers are sometimes classified as follows: (1) review courses, (2) content courses of college grade, (3) methods in geography, (4) professionalized content courses. The first, if at all complete, would consume all the time allotted to our subject; the second leaves out methods; the third is all methods and no content; the fourth combines method with content, is pedagogically sound, and saves valuable time. The last, therefore, is our choice.

It is difficult to suggest in a brief outline containing only the big topics, the kind of course we have in mind, nevertheless, it is here inserted:

THE BIG UNITS OF WORK, WITH TIME ALLOTMENT FOR EACH QUARTER

FIRST QUARTER

Unit	*Title*	*Class Periods*
I.	A New View	2
	What is geography?	
	What are its aims?	
	What are geographic principles?	

II. Mathematical Geography 8
The Earth—Position in solar system
Size
Shape
Ancient beliefs; proofs; consequences
Rotation
Day and night
Revolution
Seasons
Causes; effects
Latitude
Related topics
Longitude
International Date Line
Standard time and related topics

III. Maps and How to Read Them 3
How maps are made—a few projections
Kinds; interpretation

IV. Materials of Earth's Crust 4
Minerals and rocks
Mineral resources of the United States
Weathering and soils
Agriculture in the United States

V. Work of: 4
Underground water and wind
Running water
Glaciers

VI. Earthquakes and Volcanoes 1

VII. Land Features, Origin and Influence 5
Mountains, Plains, Plateaus } Special emphasis upon man and his activities

Total for Quarter, 27

SECOND QUARTER

VIII. Climate 12
Atmosphere (3)
Winds and storms (4)
Classification and study of kinds of climate (5)

IX. Geographic Principles as Applied to 13
Ocean and its shores (4)
Coastal activities of the U.S.
Forests and products (2)
Transportation (3)
Manufacturing (4)

X. A survey of principles learned, as determining man's distribution and work 2

Total for Quarter, 27

THIRD QUARTER

XI. A study of a selected region, making thoro application of all the principles learned in the previous semesters, and

XII. Using the best-known methods and devices:

Project and Problem Journey Type Study, etc.	Methods	
Maps of all kinds Pictures Grafs Exhibits Bulletin Board	Visual Aids	36
Current Events Magazines Geographical Readers Etc.	Supplementary Reading	
Games Puzzles, etc.	Devices for review	

Total for Quarter, 36
Total for entire course, 90

The 90 periods are assumed for convenience as the total time given to the subject. The first two quarters, the subject has three class periods per week, making a total of 54 periods. The last quarter has a total of thirty-six.

The first part of the course covering two quarters is intended to cover, as far as possible, the most useful geographic principles, but with the emphasis, where the subject will permit, upon the United States. For example, the topic, "Weathering and Soil," will be followed by a survey of "Agriculture in the United States," and the "Work of Rivers" will use the rivers of United States as illustrations. These first two quarters should, then, not only teach principles but give the student a fairly good knowledge of his own country.

The third quarter, containing 36 periods, should be a regional study, preferably of another continent or country. This course needs careful planning for two purposes: (1) to apply constantly the geographic principles learned in the previous quarters, (2) to show, by using, all the best methods of geography instruction.

We have suggested that this last unit of the course should be a foreign country. Our students need to analyze the apparently strange foreign customs as reaction to a different environment than our own; they need also to candidly admit that many times the people of a foreign land think straighter than we do ourselves. However, the normal school teacher must first gain the victory over himself before he can teach as he should.

SOCIAL GEOGRAPHY AND LETTER WRITING

PAULINE RAFTER POWERS
Boston Model School

Last year, at the beginning of the fall term, I made it a point each day to read aloud to my fifth grade pupils a "true story" letter, personal ones written from abroad by friends, famous letters written by Roosevelt, Whittier, Lincoln, Phillips Brooks, Thomas Hood, Thackeray and Dickens.

I asked the children to bring from home letters of interest which had been written in other parts of the country or in foreign lands. The next day a letter was brought in from Los Angeles and one from Miami. It so happened that we were about to start a study of the southern fruit states. Wouldn't the class like to exchange letters with California and Florida school children?

After some discussion it was decided that I should write to the superintendent of schools in St. Augustine, Florida, and also in San Francisco, California, asking each to supply the name and address of a fifth grade teacher who would be willing to allow her pupils to correspond with mine.

After sending the two letters and while optimistically awaiting answers, we took up a class study of Florida and California—location, products, ports, occupations, climate, history and population. Groups read, studied, and reported (after consulting with me) on the following topics, and, in the meantime, the entire class gathered information on them from schoolroom library and public library sources.

1. Early Indian Life in Florida
2. The First White Settlers in Florida
3. St. Augustine—The Oldest City in the United States
4. Ponce de Leon's Search for the Fountain of Youth

As an outcome of the reports, these class questions were raised and were answered largely by those pupils who had reported.

1. Has any nation but Spain ever owned Florida?
2. What is the meaning of the word Florida?
3. How did the life of the Cretes (in Florida) differ from that of the Iroquois and the Algonquins? Why?
4. What other parts of the New World were settled by the Spanish and why did they choose these places?

5. If Columbus established a Spanish claim on much of North and South America, why is it after holding territory there so many years, Spain now holds none?

6. Why do baseball players train in St. Augustine during the winter months?

7. Why was the entrance to San Francisco harbor named "The Golden Gate"?

8. Who were the "Forty-niners"?

9. Which has brought more wealth to California—its gold or its fruits?

10. Why was southern California chosen as an ideal spot for making moving pictures?

11. What moving pictures have you seen that showed life in the early days of California?

12. Where would you rather go for a winter pleasure trip—to Florida or to California? Why?

Presently came gracious letters from the St. Augustine and San Francisco superintendents supplying the necessary addresses. It was interesting to figure up the number of days it took the letters to reach Boston and to trace the possible train, or boat, or airship routes which the mail might have followed.

Someone has said that children should study together in school those things which go together in life. The very names "Florida" and "California" suggest a Spanish historical background rooted in Columbus' first voyage and it seemed both logical and delightful that the children were getting this historical background not as a thing aloof, but as part of the geography of these states.

Then began the children's correspondence. About twenty-five letters were sent to the Rapael Weill School in San Francisco and the eagerly awaited replies came six weeks later. A large percentage of the names of writers were Japanese and this raised the questions: Why have so many Japanese gone to California? Why are there so few in Boston? What do the Japanese do in California? Do they become citizens?

The discussion led very naturally to a general geographical study of Japan and I suggested writing to the Junior Red Cross for a Japanese school address.

Mrs. Derby, the president of our local Metropolitan Chapter of the Junior Red Cross, kindly sent in reply a beautiful booklet of drawings, paintings, and photographs. This booklet had been made by Japanese school children and contained a letter to which was attached this translation:

DEAR AMERICAN FRIENDS,

The cherry blossoms are now blooming in our country and the spring is advancing more and more. How are you? We are wondering about the school life of our friends who live across the sea.

We are all right and are happy in our studies. To initiate our friendship with you, we have made a portfolio of our school products. May you accept it, although humble, with the same affection as that with which we send it.

We would like to be friends for a long time and be of assistance to each other. We wish you good luck and joy.

Very sincerely yours,
NOBORN WATANABE

The material in this exquisitely made booklet led to group study discussion and reports on the following topics.

1. When do the cherry trees bloom in Japan?
2. Of what use are Japan's waterfalls aside from adding to the beauty of the scenery?
3. Why do these Japanese children send us a picture of a rice-planting festival?
4. What is their religion? What is their form of government?
5. Did Japan take part in the World War? On which side?
6. What is the reason for so much Japanese emigration?
7. What are their chief products?
8. What American opened up Japan to world trade?

The superintendent of schools in Montreal wrote inviting us to correspond with a fifth grade in that city and we gladly did so. Replies received from the Canadian city at about Christmas-time bore a stamp with King George's likeness; and printed on the envelope the slogan "Mail Early" and beneath it, "Deposez de bonne heure." It was interesting to trace the French and English possession of Canada thru just these two expressions and it seemed to lead very naturally to class letters to school children in London, Sydney, Auckland, Calcutta, and other parts of the British Empire. We received interesting replies from all of these sources.

Easily and pleasantly we were learning so much valuable geography and not a little history thru the delightful medium of letter writing. It is impossible to describe the eagerness with which replies were awaited, the zest and interest with which topics were pursued, the ease with which geography facts were mastered—seemingly without tedium or boredom! "Check-up" fact tests showed a distinctly higher class average than had resulted from tests given after the more usual teaching procedures had been followed.

My part of the work was no more onerous and certainly a great deal more interesting than it had been in other years. As for our many visitors—they were most appreciative of our efforts in vitalizing geography thru the human touch of children's letters to each other.

MAIN-A-DIEU ET SCATARIE

O. GAYLORD MARSH
Sydney, Nova Scotia

A HAND OF EARTH AND STONE

Main-a-Dieu, easternmost point of Cape Breton Island, simulates a clenched right hand with forefinger pointing toward the Atlantic horizon of the morning sun. That hand of earth and stone, appropriately named "Hand of God" by the French Fathers from physical suggestion and for spiritual direction, formerly beckoned the Pre-Columbian Basque fishermen who named its little finger Cape Breton, was the last continental hand of destiny that directed Lindbergh on the route to fame, and it points the mind to a world of past and future reveries.

FIG. 1. Swordfish harpooner in his pulpit near Scatarie. Photo by O. Gaylord Marsh.

RESPONSE TO GESTURE

It is a human characteristic to obey the commanding gesture of a firm and friendly hand, and this hand of terra firma always beckoned me to come and then to go in the direction indicated. I often obeyed the former gesture, and finally yielded a little to the latter just to visit the only tangible object pointed out and thus satisfy a personal hobby for visiting many of the small and unfrequented islands of the world. And so I visited Scatarie Island with its scanty population of eighty-five sturdy fisher-folk, its one church, and its one school.

GRAVEYARD OF ATLANTIC

I crossed to Scatarie, the so-called "Graveyard of the Atlantic," in a one-cylinder fishing launch that was scarred by swordfish and lobsters perilously caught to feed the epicures of Boston and Montreal. And when I arrived I saw little more of physical geography than the low and rockbound bit of *sec terre* that gave name to that fragment of earth; but I found that, for him who could remain a while, there was much of interest—many a sea tale to be told in the simple enthusiasm of isolation and many a lesson in human geography to learn in that environment of stern hardship. Indeed, I have always liked to visit frontier outposts to study human nature in the raw and to imbibe the naïve philosophy that is evolved under the influence of unsubdued nature and that has not been rendered artificial by the complexities of modern civilization.

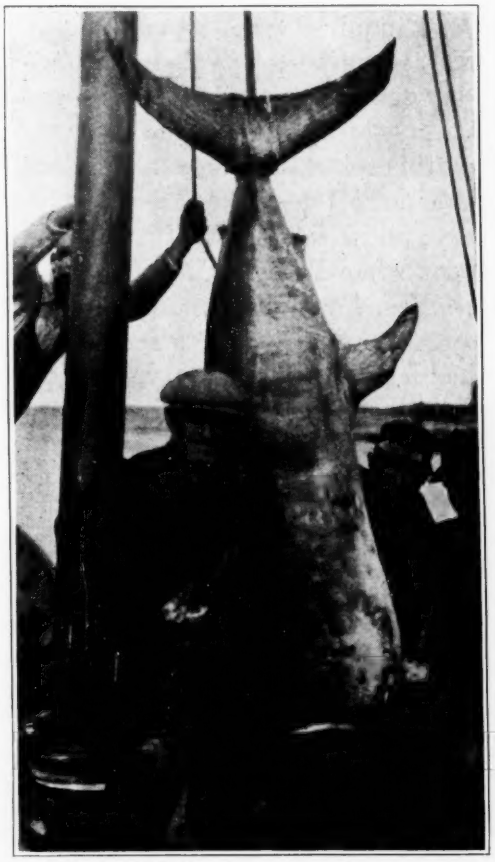

FIG. 2. Bluenose fishermen with swordfish caught in vicinity of Scatarie. Photo by O. Gaylord Marsh.

MOTHERS OF EMPIRE

The men of Scatarie were at the harvest of the sea, from the hazy horizons of which there came the "put-put" of invisible launches. My stay was to be brief. So I walked some two miles across the island and stopped at the substantial home of a fisherman, with whose sixty-five year old wife I visited for the two hours at my disposal; and hers is the story I shall epitomize, as exemplifying the heart throbs on that inconspicuous speck in the northwestern rim of the vast Atlantic.

Mentally alert and physically active she sat on a century-old teakwood sea chest by the window and told me of her forty years of lonely life in fog and sunshine, tempest and toil. Now she would turn her finely wrinkled and cross-wrinkled motherly face toward the sea; and then she would sigh and say: "It's about time the men were coming home." And I saw typified in her face the older pioneer mothers who too looked away to the troubled sea, across the vast plains, and down forest trails solicitous for the return of fathers and sons who braved the elements to build empires.

I inquired who the men might be; and she said, "husband and six stalwart sons." Then I asked, "Good mother, do you sit every day on the old sea chest and look and sigh?" And she replied: "Yes, for over forty years. You know it takes brave men to face the waves on this treacherous coast. But today it is easy to look at the sea, tho it is not often so. No, I do not always sigh, for sometimes I have to cry; and I tell you that some of the happiest times of my life have been when I was crying. Do you understand?"

Yes, I understood; and I also understood her stories of shipwreck and rescue, of a seaman once washed upon the cliff behind her house to momentary safety only to be stricken back into the yawning sea by a drifting deal, of their winter isolation, and of a sister in Boston whom she had not seen for forty years.

The New Versus the Old

But I remarked that they now have a telephone, that there are two or three radios on the island, and that soon the airplane will bring doctors when they are sick and mail when they are icebound. "Yes," she replied, "the telephone is good; but the radio music is not so nice as the old time tunes. The airplane may help, but when we have all those things perhaps our men will not be so self reliant." So now I am wondering if that good old frontier mother is correct.

Victory, But Reverence

I felt as tho I had stepped back a moment into a by-gone century; and I had learned the lesson I had gone to seek; but while I had been deeply interested, I was glad to respond again to the call of Main-a-Dieu. So I returned and reflected on my little adventure.

The sea that is frequently so turbulent was as smooth as glass that day, the sun had dispelled the fog for my journey, and the jagged rocks were no menace to me. Was that luck or triumph?

Well, be that as it may, I felt a sort of triumph; and when I was safe again on Main-a-Dieu I liked to fancy myself a sort of Nike in the hand of Zeus.

But the thought that clings to me is this: There should be more statues by the sea and on the plain and where the forest stood to commemorate the loyalty and patience and philosophy of our frontier mothers and grandmothers who could not spend their waiting hours at bridge and teas.

EDITORIAL NOTES AND NEWS

According to a Department of Commerce news release dated October 12, 1931, nearly two trillion cubic feet of natural gas were produced in the United States in 1930. Texas led in the production, followed by Oklahoma, California, Louisiana, West Virginia. Industrial users consumed 80 per cent; domestic and commercial users, 20 per cent. The price per thousand cubic feet paid by domestic consumers was 67.4 cents. Natural gas trunk lines totaled about 50,000 miles.

Every state in the United States levies a gasoline tax. During the first six months of 1931, this tax yielded a revenue of a quarter billion dollars. It will be used principally for road improvement. In England this tax is about 16 cents per gallon.

The prediction that the loss of the Saar and Upper Silesian coal fields would leave Germany short of coal failed to materialize because of the scientific way in which Germany is using its coal. According to Hoar's *The Coal Industry of the World*, only 40 per cent is used raw. The remainder is carbonized and thus reaches the ultimate consumer in the form of coke, briquets, coal-tar products, gas, electric current, or oil. Most of the briquets are made from lignite, at the rate of three tons of lignite to one ton of briquets. A large quantity of briquets is used near the briquetting plants as fuel to generate electricity which is dispatched so economically that it can compete with water power. The gas is a by-product of the coke ovens. Formerly, this gas was used to heat the coke ovens and fire steam boilers. Now, cheaper coal, too poor to stand transportation costs, furnishes the local coke ovens with fuel, releasing the more valuable coke-oven gas for distribution thru 590 miles of pipe line serving an area in which 10 million people live. The liquid coal is made by suspending powdered coal in oil and subjecting it to hydrogen at a temperature around 425° C. and a pressure of 250 atmospheres. Thus Germany has more coal than it needs for its own use and reparations. However, since most of the export coal leaves via Rotterdam, it cannot compete with British coal laid down at Hamburg and the Baltic Sea ports. To meet this competition, the construction of the Hansa Canal to link the Ruhr with the North and Baltic sea ports is proposed.

An exercise that some children may enjoy plotting on a map is the Lindberghs' flight to the Orient. Note these stops: Ottawa, Moose Factory, Churchill, Baker Lake, Aklavik, Point Barrow, Nome, the Kuriles, Nemuro on Hokkaido, Tokyo, and Shanghai. Following this, have them describe the landscape over which the flight occurred, and the probable ways in which the landscape was helping and hindering people in making a living there.

According to a recent (1931) publication of the Department of Commerce, *Coal Industry and Trade of the Netherlands,* the Netherlands produced 12 million tons of coal in 1929. This was three times the 1920 production. Practically all of it was in Limburg. The colleries are among the largest and most modern on the continent. As the coal is impure it must be treated. This development of the coal industry has made the Netherlands practically self-sufficient. However, as certain varieties of coal for certain specific purposes are lacking or prohibitive in price, the Dutch continue to import these varieties and seek markets for their surplus.

INTEREST-STIMULATING DEVICES

I. Relay Drill

Each child in the first row is given a sheet of paper on which he is to write the numbers according to how many words you wish to use in the drill. For example, we will say ten. The child is then instructed to write the numbers to ten in the margin of his paper. In the first space he is told to write the answer to the first question or if he cannot answer the question he is to draw a line after that number. He then passes the paper to the person back of him who is to write the answer to the second question and so on until the ten spaces are filled. The row finishing with the answers most nearly correct is the winner. I use this for location, products, or any similar drill. There must be a very short time given to the answer to each question.

II. Geography Baseball

The room is divided into two sides with captains, whose duty is to choose his "batters" to best advantage. The "pitcher" is the person who pronounces the words. The captain of the first team sends a batter to the board and the pitcher gives him three geography words to spell. If he spells the words correctly he goes to first base in one corner of the room. If he misses he takes his seat and one "out" is counted against his side. When a player has been to all three bases he has made a score. When three outs are counted against one side, that side is out and the other side is up to bat. We keep score and call nine innings a game. Sometimes the same game lasts for several days as we do not take very much time in a period for the drill. You will find boys especially interested in the game and it does improve their spelling. This device can be used for location, products, etc. I usually assign the words that they are to spell before the game and they are studied with ardor.

III. I Sent My Ship A-Sailing

One child says, "I sent my ship a-sailing." Another says, "With what is it laden?" The first child says, "With rice." "From whence did it come?" The second child then answers, "Japan," and the game progresses from one product to the other. Sometimes the second child asks from what country the ship is sailing and the first child replies with the name of the country and asks the second child to name a product.

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THE FUTURE

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DURING the coming year the JOURNAL OF GEOGRAPHY will feature articles meeting the various appeals of its many subscribers. A number of contributors will draw on first-hand information gained during their travels in the past summer. Others will relate their teaching experiences in the classroom which will be run as a "How to Teach It" Series. Teachers may keep abreast of what is new in the field of geography by reference to the pages devoted to reviews and annotations (often for want of space included in the advertising pages). As usual many current events of geographical interest will come from the editor's desk. Now is the time to secure your membership so as to be certain of obtaining all this helpful material.

The following are a few of the fine forthcoming articles.

One-Cycle or Two-Cycle Geography. By Helen M. Kopf
A European Fair. By Emily V. Baker
Sino-Russian Relations in Sinkiang. By Eloise Bradshaw
The West Coast of India. By Warren Strain
India East Coast. By J. Riley Staats
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1000 and One. The Blue Book of Non-Theatrical Films. 144 pp. The Educational Screen, Chicago. 1931

Eighth Edition. A classified list of films procurable from all producers and distributors of films.

Lake Series No. 1. **The Port of Buffalo, N.Y.** 161 pp. Illustrated. 50 cents. Lake Series No. 3. **The Port of Milwaukee, Wis.** 130 pp. Illustrated. 45 cents. Corps of Army Engineers in cooperation with U. S. Shipping Board. Supt. of Documents, Washington, D.C. 1931

These are the first of a new series of reports similar to the 22 volumes of the Port Series. The report on Detroit, Lake Series No. 2, is in press.

C. L. Pack and Tom Gill. **Forest Facts for Schools.** 336 pp. Illustrated. The Macmillan Co., N.Y. 1931. $1.00

A story of the forests: What trees are, how they function as living objects, their enemies, their contributions to man's development of a region.

Clarence F. Jones and Floyd F. Cunningham. **Laboratory Manual in the Geography of South America.** 134 pp. Henry Holt & Co., N.Y. 1931. $1.00

For college students. This manual accompanies the college text, South America, by C. F. Jones. Its many map exercises are designed to give the students a clear picture of the physical background of South America, and interpret the human adjustments made to this physical complex.

C. R. Niklason. **Commercial Survey of the Pacific Southwest.** Domestic Commerce Series No. 37. 647 pp. Illustrated. Supt. of Documents, Washington, D.C. 1930. $1.85

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Charles Fitzhugh Talman. **The Realm of the Air.** 318 pp. Illustrated. The Bobbs-Merrill Co., Indianapolis, Ind. 1931. $4.00

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Owen Tweedy. **By Way of the Sahara.** 247 pp. Illustrated. Duckworth, London. 1930

A narrative of incidents connected with driving a small car from the Nile across Equatorial Africa to Lake Chad, thence eastward to the Niger and north across the Sahara to Algiers.

The Port of Boston. Port Series No. 2. 238 pp. Illustrated. 1929. 45 cents. **Mobile, Alabama.** Port Series No. 3, Part 1. 142 pp. Illustrated. 1930. 50 cents. **The Port of Pensacola, Florida.** Port Series No. 3. Part 2. 66 pp. Illustrated. 1929. 30 cents. Supt. of Documents, Washington, D.C.

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H. P. Cushing, Frank Leverett and Frank Van Horn. **Geology and Mineral Resources of the Cleveland District,** Ohio. Bulletin 818. 138 pp. Illustrated. Government Printing Office, Washington, D.C. 1931

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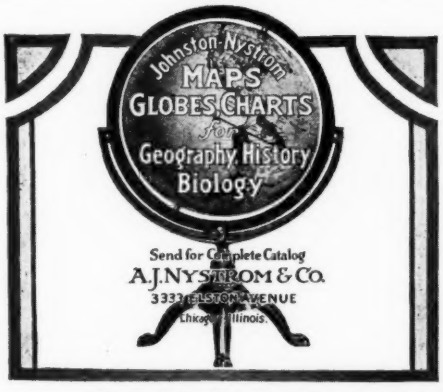

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